

Commissioning of the Silicon Strip Detector (SSD) of ALICE

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The Inner Tracking System (ITS) of the ALICE experiment, consists of six cylindrical layers of silicon detectors, the Silicon Pixel Detectors (SPD), the Silicon Drift Detectors (SDD) and the Silicon Strip Detectors (SSD). It covers the central pseudo-rapidity region ($|\eta| < 1.0$) for all vertices located within the length of the interaction diamond ($\pm 1\sigma$).

The outer layers of the ITS consist of double sided Silicon Strip Detectors mounted on carbon-fiber support structures. The SSD is crucial for the connection of tracks from the main tracking device of ALICE, the Time Projection Chamber (TPC), to the ITS and also provides dE/dx information to assist particle identification for low-momentum particles. The detector consists of 1698 modules each one having 1536 p and n-side strips, resulting in total to more than 2.6 million channels. The SSD has been actively participating in all the testing, commissioning and run activities as well as in all the data taking periods of the ALICE experiment, making it the largest working double sided detector in the world. It has registered large statistics of cosmic data in 2008 and is included in the initial detector configuration of ALICE for the first LHC collisions.

In this talk, the latest results from the commissioning of the SSD with cosmics will be presented. The hardware status of the detector, the front-end electronics, cooling, data acquisition and issues related to the on-line monitoring will be shown. In addition, the procedures implemented and followed to address the alignment with the rest of the ITS sub-detectors along with both on-line and off-line calibration strategies will be described. Finally, results from simulations as well as from the reconstruction of cosmic data demonstrating the performance of the detector will be presented, proving that the SSD is ready for the forthcoming proton-proton data taking.

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